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## ABSTRACT

Operation Waste Watch is a series of seven sequential learning units which addresses the subject of litter control and solid waste management. Each unit may be used in a variety of ways, depending on the needs and schedules of individual schools, and may be incorporated into various social studies, science, language arts, health, mathematics, and artistic activities. Each unit consists of a teacher's guide, filmstrip-cassette set, activity cards, test materials, duplicating masters, and a poster. This document contains the teacher's guide and activity cards for the kindergarten level unit entitled "Natural and Man-Made Objects." In this unit, students practice classification skills and learn to differentiate between natural and artificial objects in indoor and outdoor environments. They are also taught to identify litter. Twenty-two activity cards for classes are included. (CW)

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# Operation Waste Watch

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## Natural and Man-Made Objects

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Level  
K

## Teacher Guide

DEPARTMENT OF WASTE MANAGEMENT  
DIVISION OF LITTER CONTROL & RECYCLING  
Eleventh Floor, Monroe Building  
Richmond, Virginia 23219



# INTRODUCTION

OPERATION WASTE WATCH is a series of 7 sequential learning units which addresses the subjects of litter control and solid waste management. The curriculum, developed by the Division of Litter Control, Virginia's state litter prevention agency, is designed for classroom use in kindergarten through grade six.

Each OPERATION WASTE WATCH unit may be used in a variety of ways, depending on the needs and schedules of individual students and schools. Each unit is interdisciplinary in approach and may be incorporated into the various science, social studies, and health curricula Virginia teachers are presently using. Language arts, mathematics, and artistic activities are also highlighted. Each unit consists of a teacher's guide, filmstrip-cassette set, activity cards for class and individual student use, test materials, coloring book duplicating masters or comic books, and a colorful poster. Each elementary school in Virginia may receive a complete set of OPERATION WASTE WATCH without cost.

Flexibility is a key element of the OPERATION WASTE WATCH program. The sequence of the units within the curriculum may be changed to suit the abilities of students in the individual school. For this reason, teachers should become familiar with each of the units. Each instructor should also feel free to present concepts found in previous units. This is especially important for upper elementary students who are unfamiliar with the solid waste vocabulary and ideas presented in earlier units. The materials in each unit are color-coded for easy identification.

The teacher is free to shorten or lengthen the series of activity cards which are the heart of the unit, to suit her/his schedule or to build her/his own unit around the OPERATION WASTE WATCH auxiliary materials.

OPERATION WASTE WATCH is based on WASTE IN PLACE, the elementary school curriculum recently created by Keep America Beautiful. Solid waste management has become a very important environmental topic, but it is a subject which is too often superficially addressed in elementary textbooks.

WASTE IN PLACE was the first sequential elementary curriculum in the United States to address the concepts of proper waste handling. WASTE IN PLACE is available at cost to all localities around the country organized under the Clean Community System of Keep America Beautiful and to other interested groups. In developing OPERATION WASTE WATCH for Virginia's elementary schools, the Division of Litter Control changed the format of WASTE IN PLACE and designed supplementary activities and materials, including audiovisual aids.

OPERATION WASTE WATCH differs significantly from WASTE IN PLACE in its approach to the subject matter only in Levels 2 and 3. The Division believes that the ideas presented in these 2 units merit special emphasis in a study of solid waste problems in Virginia. Level 2, LITTER POLLUTION, addresses pollution problems associated with litter, while Level 3, TRASH TRENDS, examines packaging trends in relationship to current solid waste problems.

## Field Testing

Two versions of OPERATION WASTE WATCH were piloted during the 1979-1980 school year in over 125 classrooms in 14 school systems with very positive results. A summary of the results of this field testing is available from the Division. Based on the results of the piloting, portions of the draft curriculum were revised in the fall of 1980.

## Changing Littering Behavior

In addition to equipping students with important facts about litter and solid waste management, OPERATION WASTE WATCH is designed to help students modify their everyday waste disposal habits.

A study of students' waste disposal behavior was conducted in the spring of 1980 by two psychologists from Virginia Polytechnic Institute and State University, Mr. John Cope and Dr. Scott Geller. Their study confirmed that students learn from involvement with OPERATION WASTE WATCH. Student test performance following the curriculum was statistically higher than performance on the pretest. (Grades 1, 4 and 6 were the levels involved in the study.) Almost all of the teachers indicated that the OWW program materials were interesting to the students.

Most of the teachers felt that their students' littering be-

havior had decreased as a direct result of the program. The Division of Litter Control encourages teachers to emphasize recycling and the proper disposal of wastes. With continued positive reinforcement of proper behavior, and practice by the children of proper disposal techniques, teachers will see an even greater reduction in littering behavior.

## **The Virginia Plan: A Model Program to Prevent Littering**

The DIVISION OF LITTER CONTROL was established in 1977 to control, prevent, and eliminate litter from the state to the maximum practical extent.

One-half of Division funds are granted annually to the localities of the state to finance local litter prevention programs. Over 90% of the counties and cities annually apply for and receive grant money from the Division. To assist these localities in organizing effective, comprehensive, long-range litter control programs, the Division has developed an organizational package, **THE VIRGINIA PLAN: A MODEL PROGRAM TO PREVENT LITTERING**, which is available to all community leaders interested in developing local programs. **OPERATION WASTE WATCH** is one component of **THE VIRGINIA PLAN**.

The Division is encouraging local litter prevention coordinators to work closely with schools in each locality. Many localities are promoting the implementation of **OPERATION WASTE WATCH** in their schools.

**CONTACT THE DIVISION OF LITTER CONTROL FOR THE NAME AND PHONE NUMBER OF THE LITTER CONTROL COORDINATOR IN YOUR LOCALITY.**

# **OPERATION WASTE WATCH UNIT TOPICS**

## **Level K**

### **Natural and Man-Made Objects**

Students practice classification skills and learn to differentiate between natural and man-made objects in indoor and outdoor environments. They also learn to identify litter.

## **Level 1**

### **Waste Out of Place**

Students classify objects into two categories, "waste objects" and "useful objects." In addition, they learn to identify litter and dispose of their own waste items properly.

## **Level 2**

### **Litter Pollution**

Students study the negative effects of littering: injury to humans and animals, environmental pollution, and wasted resources. In addition, they explore a littered area, study the characteristics of litter, and learn how to clean it up.

## **Level 3**

### **Trash Trends**

Students trace historical changes in consumption and packaging. They also study the roles of packaging in everyday life and learn the meaning of "biodegradable."

**Level 4**

## **Let's Waste Less Waste**

Students examine changes which can be made in their homes to reduce solid waste and litter. They also explore various sources of litter in their communities.

**Level 5**

## **Trash Treasures**

Students discover that while many things are recycled by nature, quite a number of modern products must be recycled by people. They learn that recycling and resource recovery can help save important resources which are often lost when items are tossed into a trash receptacle.

**Level 6**

## **Community Solutions for Solid Waste Pollution**

Students study their own locality's solid waste problems and design a model waste disposal plan for an imaginary community.

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# KINDERGARTEN LEVEL

## RATIONALE

This series of instructional materials, developed by the Division of Litter Control, is designed to help elementary students deal effectively with solid waste problems encountered in their everyday lives. It will also prepare them to deal as adults with the growing problem of waste disposal facing each community. In Virginia, litter pickup alone is estimated to cost \$25 million annually.

Litter is a very accessible pollutant and one even young children can comprehend. Children may be able to do very little to solve other environmental problems; but they can learn to dispose of waste properly, help recycle some items, and come to understand how their own behavior affects the environment. A litter prevention unit is an excellent place to begin creating environmental awareness. From this point we can begin building in our youth a strong sense of environmental stewardship and pride.

The materials, activities, and instructional resources selected for the kindergarten students introduce the ideas of natural and man-made objects in the environment and begin to deal with the topics of waste and litter. The unit emphasizes the development of scientific observation and classification skills essential to the ultimate goal of preparing young citizens to make rational decisions about personal and community solid waste disposal. By observing and classifying objects in his/her immediate environment, the kindergarten student becomes much more aware of the litter and waste people deal with on a daily basis. This program follows objectives established in Program Goals and Objectives for Elementary Science, developed by the Virginia Department of Education in 1978.

## MAJOR IDEAS OF THE KINDERGARTEN UNIT

1. There are both natural and man-made objects in the environment.
2. Objects become waste when they are of no further use.
3. Litter is waste (either man-made or man-used) which is in the wrong place through the improper actions of people.
4. People are responsible for disposing of waste properly.

## **UNIT OBJECTIVES**

At the completion of this unit, the student will be able to:

1. **DEMONSTRATE** the process skill of observing;
2. **CLASSIFY** a group of objects into distinguishable subgroups;
3. **IDENTIFY** several common natural and man-made objects;
4. **IDENTIFY** waste and litter;
5. **RECOGNIZE** that waste belongs in a trash can or litter bag.

## **ELEMENTARY SCIENCE PROGRAM OBJECTIVES**

The following program objectives should be emphasized in kindergarten level science programs throughout Virginia and are incorporated into this unit (see reference 1, pg. 6):

1. **Observing**—The student will use all senses in the identification of objects and their properties, changes in properties, controlled observations, and ordering of a series of observations.
2. **Classifying**—The student will classify objects, actions, and phenomena.
3. **Summarizing**—The student will describe orally, in writing, or nonverbally, conclusions about the processes and products of scientific inquiry.
4. **Valuing Scientific Inquiry**—The student will participate willingly in science activities, accept evidence gathered through scientific methods, and value critical thinking.

## **INSTRUCTIONAL STRATEGY**

1. Review this guide and study all unit components thoroughly. The activity cards are the heart of the unit. Also become familiar with the other **OPERATION WASTE WATCH** units.
2. Decide which elements of the unit kit and which activity cards you will use. Add your own ideas as necessary or pull activities from **OPERATION WASTE WATCH** units on other grade levels.
3. Prepare all necessary materials and arrange for any outside speakers or field trips.
4. **Be sure to find out what your community is doing to fight the littering problem. Contact the Division of Litter Control or your local government.**

5. Administer the pretest to your students. Use the results to modify your unit plans as necessary.
6. Briefly discuss the topic and title of the unit with your class. Tell the students about some of the activities they will be involved in.
7. Explain the contents of the unit kit to your students.
8. Hang the poster in a prominent spot in your classroom.
9. Present the filmstrip to the class. During the showing, elicit discussion of important ideas.
10. Order the **Junior Ecology Club Certificates** from the Division.
11. Proceed with the **CLASS ACTIVITY CARDS**.
12. Present the coloring books at some appropriate point in the unit. Use these as a motivational and teaching tool.
13. At the completion of the unit, present the filmstrip once again as a review activity. Elicit discussion of ideas the children have learned.
14. Administer the posttest to your students.
15. Return all unit components to the box for use by the next class.
16. **Be sure to review and reinforce proper waste disposal habits throughout the school year!**

## TIME FRAME

The kindergarten unit will take approximately 20 classroom learning periods (about 4 weeks) to complete. On the average, allow 15-20 minutes for each learning period.

If you desire to teach a shortened version of the unit, we recommend you use just the **CORE ACTIVITY CARDS**. The **CORE ACTIVITY CARDS** for each level are labeled **CORE** in the upper left-hand corners. Using just the core activities should cut the required instructional time to 2 or 3 weeks. Another method is to use the **ACTIVITY CARDS** and other materials as guidelines for developing your own shortened unit.

Allow approximately 20 minutes for administering the tests at the beginning and end of the unit. Each filmstrip viewing should take about 10 minutes. The coloring books will take approximately 40 minutes of instruction time to complete.

You may find the Level 1 and 2 materials helpful in teaching a litter unit to your kindergarten class.

## EVALUATION INSTRUMENTS

In the inside cover packet of the unit box, you will find directions for administering short tests to your students. The

pretest results should tell you which students are already familiar with the major ideas of the unit and which students may need special help grasping these ideas.

The posttest results will help you determine the effectiveness of your unit.

## FILMSTRIP AND CASSETTE

The filmstrip and cassette set provided with this unit is designed for use as both an introductory and review activity. This guide contains a copy of the filmstrip script with asterisks (\*) indicating spots in the program where we encourage you to stop the cassette and filmstrip to allow for class discussion. The cassette has audible tones and should be used with a manually-operated filmstrip projector. **The filmstrip is brief and is to be used as a teaching tool. During the showing, please stop the cassette and filmstrip as necessary to encourage group discussion of the ideas presented.** The script may be read aloud by an adult if for any reason a cassette recorder is not available or if this delivery method is preferred.

Before using the ACTIVITY CARDS, present the filmstrip to the class as an introduction to the unit. This may be done in small groups or as a total class activity. Present the filmstrip at the end of the unit as a review of major ideas.

## CLASS ACTIVITY CARDS (CACs)

The 22 CLASS ACTIVITY CARDS (CACs) for the kindergarten unit are designed for use by the whole class or a large group of students. OPERATION WASTE WATCH units for grades 1 through 6 provide INDIVIDUAL ACTIVITY CARDS (IACs) for individual or small group use in addition to CACs.

Used in numerical order, the CACs provide a suggested sequence of activities to develop the ideas of natural and man-made objects, trash, and litter. The CACs should be used after the students have studied the filmstrip. At the completion of the CACs, you should present the filmstrip again as a review and then administer the posttest.

To shorten the time spent from approximately 20 class days to 10-15 days use only CACs which present core activities. The CORE ACTIVITY CARDS are labeled CORE in the upper left-hand corners.

OPERATION WASTE WATCH is a flexible program. Feel free to restructure, modify, and delete ACTIVITY CARDS as necessary.

## COLORING BOOKS

In the kit box you will find a folder containing duplicating masters for the coloring book entitled, *Good Clean Fun*. Before you teach the unit, duplicate a copy of the coloring book for each student.

At some point in the unit, pass out the coloring books to your students. Read the captions to the class. Discuss the illustrations and the theme of the story presented.

After the children color the pages, instruct them to take the books home to share with their families.

Quantities of printed, assembled coloring books are available from the Division of Litter Control on a limited basis.

## JUNIOR ECOLOGY CLUB PROGRAM

Since the fall of 1978, the Division of Litter Control has sponsored a successful **ECOLOGY CLUB PROGRAM** for grades 6-12. Because of the favorable input from teachers in the lower grades, the Division has developed a **JUNIOR ECOLOGY CLUB PROGRAM** for students in kindergarten through grade 5 who have completed at least 1 unit of **OPERATION WASTE WATCH**. To obtain membership certificates for your students, simply **duplicate** the **JUNIOR ECOLOGY CLUB ORDER FORM** included in this guide and return a completed copy to the Division.

The certificates may be used simply as a final reward for your students once they have completed the **OPERATION WASTE WATCH** unit, or used to begin an active ecology club program with your class. A list of suggested club activities will be included with your certificates.

## COMING IN THE FUTURE

A major advantage of the activity card format used in **OPERATION WASTE WATCH** is that additional cards may be added and revisions made at minimal expense to the Division.

The Division will continue to evaluate the program throughout the coming years. As a result of this evaluation, new and revised **ACTIVITY CARDS** will be developed periodically and sent to your school.

## ORDERING REPLACEMENT MATERIALS FOR THIS UNIT

Replacement copies of the filmstrip, cassette, poster, teacher's guide, activity cards, and coloring/comic books for this unit may be obtained without charge from the Division of Litter Control.

## DUPLICATING MASTERS

This unit contains the duplicating masters listed below. Photocopy these materials as necessary:

1. PRETEST AND POSTTEST
2. COLORING SHEET HANDOUT FOR CAC-6/22
3. WORKSHEET FOR CAC-9/22

## VOCABULARY

As you proceed through this unit, introduce the following terms to your students **orally**. Be sure the children understand the oral definitions of these words **based on their own experiences**. They should not be required to recognize the written words or definitions.

1. LITTER—solid waste or trash which a person has put in the wrong place
2. MAN-MADE—anything in our world made by people or machines
3. MAN-USED—any object in our world used by people
4. NATURAL—anything in our world not made by people or machines; anything made by nature
5. SOLID WASTE—objects that are man-made or man-used which are no longer useful

## REFERENCES

1. Division of Sciences and Elementary Administration, Virginia Department of Education. Program Goals and Objectives for Elementary Science. Richmond: n.p., 1978.
2. Keep America Beautiful, Inc. Waste in Place—Kindergarten and First Grade Levels. New York: n.p., 1979.

# KINDERGARTEN LEVEL FILMSTRIP SCRIPT

## Natural and Man-Made Objects

(Length: 4:52)

| Narration                                                                                                                                                          | Visuals                                                                                                       |       |        |                    |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------|--------|--------------------|--------|
| 1. (Title slide)                                                                                                                                                   |                                                                                                               |       |        |                    |        |
| 2. (Credit slide)                                                                                                                                                  |                                                                                                               |       |        |                    |        |
| 3. Let's play a game! What do you see in these pictures? Do you know which picture doesn't belong with the other two? (*)                                          | Car and Two Houses                                                                                            |       |        |                    |        |
| 4. What do you see in these pictures? Which doesn't belong with the other two? (*)                                                                                 | Elephant and Two Trees                                                                                        |       |        |                    |        |
| 5. Here are pictures of a nickel, a penny, and a quarter. What else do you see? Which of these objects are coins? Which object doesn't belong with the others? (*) | <table> <tr> <td>Coin</td><td>Coin</td></tr> <tr> <td>Coin</td><td>Shoe</td></tr> </table>                    | Coin  | Coin   | Coin               | Shoe   |
| Coin                                                                                                                                                               | Coin                                                                                                          |       |        |                    |        |
| Coin                                                                                                                                                               | Shoe                                                                                                          |       |        |                    |        |
| 6. If you said the shoe doesn't belong, you're right. What are some things about the shoe that make it different from the coins? (*)                               | Shoe                                                                                                          |       |        |                    |        |
| 7. What do you see in these pictures? Which one of these places is a home for farm animals, such as horses or cows? (*)                                            | <table> <tr> <td>House</td><td>Camper</td></tr> <tr> <td>Apartment Building</td><td>Stable</td></tr> </table> | House | Camper | Apartment Building | Stable |
| House                                                                                                                                                              | Camper                                                                                                        |       |        |                    |        |
| Apartment Building                                                                                                                                                 | Stable                                                                                                        |       |        |                    |        |

8. Did you pick the stable? If you did, you're right again. Can you tell what makes the stable different from the other places? (\*)

Stable

9. Farm animals live in the stable but not inside the house, the camper, or the apartment building. People live in these other homes.

|                    |        |
|--------------------|--------|
| House              | Camper |
| Apartment Building | Stable |

10. Three of these pictures look alike in some way. Who can point to these three pictures? (\*)

|         |           |
|---------|-----------|
| Dogwood | Rabbit    |
| Roses   | Daffodils |

11. The white dogwood, the red roses, and the yellow daffodils are alike because they are all flowers. Which object is different from the flowers? (\*)

|         |           |
|---------|-----------|
| Dogwood | Rabbit    |
| Roses   | Daffodils |

12. Did you pick the rabbit? "The rabbit" is the correct answer. How is the rabbit different from the flowers?

Rabbit

13. Which of these pictures belong together because they are alike in some way? Need some help? Which things were made by people? (\*)

|            |                  |
|------------|------------------|
| Fire Truck | Trees            |
| Hamburger  | Littered Bottles |

14. Now you're thinking! The fire truck, the bottles, and the hamburger were all made by people. They belong together in the same group.

|            |                  |
|------------|------------------|
| Fire Truck | Trees            |
| Hamburger  | Littered Bottles |

15. Trees are not made by people. Trees, flowers, animals, rocks and water are all things made by Mother Nature. People do not make these natural objects.

Trees

16. Man-made objects are things people make, such as fire trucks, buildings and toys. Name some man-made objects you see in this picture. (\*)

Playground

17. Now, see if you can find two man-made objects and two natural objects in this picture of a beach. (\*)

Beach

18. Only one of these pictures has a man-made object in it. Find the man-made object; what is it? Name some natural things you see in these pictures. (\*)

|         |          |
|---------|----------|
| Stream  | Sea Gull |
| Bicycle | Rocks    |

19. Grown-ups have a big word for the kind of game we've been playing. It's called "classifying." Classifying means finding things that belong together and things that do not belong together.

CLASSIFYING

20. First, we decided to put these three coins together in one group because they are alike in many ways. We said the shoe does not belong in the same group because it is very different from the coins.

|      |      |
|------|------|
| Coin | Coin |
| Coin | Shoe |

21. Then we classified places where people and farm animals live.

|                    |        |
|--------------------|--------|
| House              | Camper |
| Apartment Building | Stable |

22. Then we found three pictures of flowers that belong together.

|         |          |
|---------|----------|
| Dogwood | Rabbit   |
| Roses   | Daffodil |

23. We found some man-made objects in these pictures.

|            |                  |
|------------|------------------|
| Fire Truck | Trees            |
| Hamburger  | Littered Bottles |

24. Remember, the bicycle was the only man-made object we found in these pictures.

|         |           |
|---------|-----------|
| Stream  | Sea Gulls |
| Bicycle | Rock      |

25. Here are some new pictures to classify. Name the things you see in these pictures. How are all four pictures alike? (\*)

|                        |                  |
|------------------------|------------------|
| Garbage Can and Litter | Dump with Litter |
| Litter on Grass        | Abandoned Car    |

26. That's right. There is some litter in each of these pictures. Litter is trash or garbage people have put in the wrong place. Trash should not be left scattered around on the ground. Even old cars which don't run anymore are litter if they are left in the wrong place. Litter
27. Do you know where litter comes from? (\*)
28. Litter comes from people who put their trash in the wrong place! Crowd of People
29. Your teacher is going to help you play some more classifying games with litter and other objects. Have fun! CLASSIFYING
30. (Credit slide)
31. (Credit slide)
- NOTE:** (\*) Asterisks indicate spots where you may wish to stop the cassette for discussion.

KINDERGARTEN LEVEL  
TEACHER CARD  
OPERATION WASTE WATCH  
VIRGINIA DIVISION OF LITTER CONTROL

## Natural and Man-Made Objects Class Activity Cards

The 22 CLASS ACTIVITY CARDS (CACs) for the kindergarten unit are designed for use by the whole class or a large group of students. OPERATION WASTE WATCH units for grades 1 through 6 provide INDIVIDUAL ACTIVITY CARDS (IACs) for individual or small group use in addition to CACs.

Used in numerical order, these CACs provide a suggested sequence of activities to develop the ideas of natural and man-made objects, trash, and litter. The CACs should be used after the students have studied the filmstrip. At the completion of the CACs, present the filmstrip again as a review and then administer the posttest.

To shorten the time spent on the unit, use only CACs which present core activities. The CORE ACTIVITY CARDS are labeled CORE in the upper left-hand corners.

IDEA AND OBJECTIVE NOTATIONS REFER TO NUMBERED IDEAS AND UNIT OBJECTIVES ON PAGES 1 AND 2 OF THE TEACHER GUIDE.

**Be sure to find out what your community is doing to fight the littering problem. Contact the Division of Litter Control or your local government for information. Explain the local program to your students.**

**Note to teacher:** Natural objects which are on the ground are not considered to be litter unless they are "man-used" and disposed of incorrectly. For example, leaves on a forest floor are not litter in this sense, and rocks left by the forces of nature on a hillside are not litter. But a large pile of leaves left in the middle of a road by a person is considered litter in the OPERATION WASTE WATCH program.

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-1/22  
IDEA 1  
OBJECTIVES 1, 2, 3**

**CORE**

## **Classifying Objects**

Place a group of no more than 20 common objects on a table where all the children can see them easily. Be sure to include an approximately equal number of both man-made and natural objects. (See CAC-2/22 for suggested objects).

Go on to CAC-2/22

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-2/22**

**CORE**

SELECT FROM THESE COMMON OBJECTS:

**Natural**

Shell  
Pine Cone  
Seed  
Tree Branch or Leaves  
Turtle, Fish or other  
Pet Animal  
Stone  
Moss  
Apple  
Bird's Nest  
Piece of Fur or Hair  
Sand in a Jar  
Earthworm  
Mulch  
Pine Needles  
Antler  
Tooth  
Flower  
Egg

**Man-Made**

Tape  
Key  
Plastic Toy  
Shoe  
Sweater  
Pencil  
Envelope  
Beverage Can  
Glass Bottle  
Candy Wrapper  
Jewelry  
Button  
Clothes Pin  
Crayon  
Stapler  
Ballpoint Pen  
Desk Calendar  
Spoon

Go on to CAC-3/22

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-3/22**

**CORE**

Hold up each object and ask the children to say its name.

Ask a few students to group the objects on the table by various characteristics such as color, size, hardness and softness, length, etc.

Go on to CAC-4/22

**OPERATION WASTE WATCH**  
**LEVEL K**

CAC-4/22

**CORE**

Now ask the children what "natural" and "man-made" mean. Explain that "natural" means all things made by Mother Nature—things that people or machines cannot make. Natural objects are things that were here in the world before people. Natural objects include: (1) all living things (plants and animals); and (2) things the world is made of, such as rocks, dirt, and sand.

Explain that "man-made" means anything in our world that people or machines **do** make.

Help the children arrange the objects on the table into these two groups—**natural objects** and **man-made objects**.

CORE

## Listing Objects

Write the words "**natural**" and "**man-made**" on the blackboard as the headings for two columns. Ask each child to look around the room, name an object, and tell whether it is natural or man-made. Have each child touch the object he/she names. Draw a small picture (and perhaps write the name) of each selected object under the appropriate category.

Review the lists and ask the children to tell the **primary use** or function of each object.

Review the definitions of "man-made" and "natural" with the students.

**Man-Made Objects:** things in our world made by people or machines

**Natural Objects:** things in our world not made by people or

CORE

## More Classifying

Put a sign reading "NATURAL OBJECTS" on one desk or table and a sign reading "MAN-MADE OBJECTS" on another.

Ask each of five children to find a natural object in the classroom and place it on the "NATURAL OBJECT" desk. Do the same for the "MAN-MADE OBJECT" desk.

Discuss the **characteristics** of each group of objects. (For example, plants are one important type of natural object, and plants are often green in color.) Have the students use their senses of touch, smell, sight, hearing, (and perhaps taste) to help you describe the characteristics of the objects. Help the class find any misplaced objects and group them correctly.

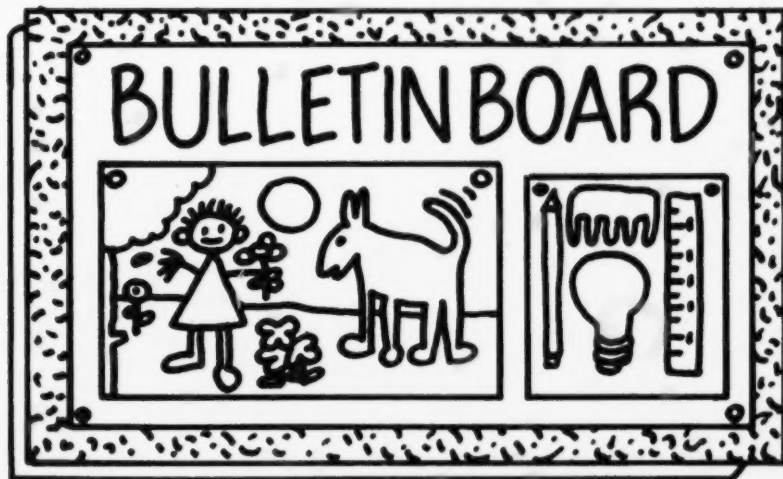
Name some object not in the classroom. Ask a student to tell whether it is natural or man-made. Have students name other objects outside the classroom and ask other individuals to correctly classify their examples.

Have the students complete the worksheet for CAC-6/22 (duplicated from the provided master) and review their selections orally. Now direct the children to color the pictures. Ask the students to take their papers home and tell their parents about natural and man-made objects.

CORE

## Drawing Pictures

Ask the children to draw two pictures—one with 4 **man-made objects** in it and the other with 4 **natural objects** in it.  
Display the pictures in the classroom or hallway.



## Feeling Game

Make a "SURPRISE BOX" by cutting a fist-size hole in the side of a covered corrugated box. Decorate the outside of the box to increase the children's interest in it. Put several small natural and man-made items in the box. Change the items every few days.

Ask the children to reach inside the box with their eyes closed. Tell them to pull out 3 natural objects and 3 man-made objects using only their sense of **touch** to find them. Check each child's mastery of this game at some point in the unit.

## **Making Happy Trash!**

Using enamel paint or paper and tape, decorate a wastebasket or trash can with attractive designs and include a slogan, such as "Home Sweet Home" or a smiling ☺ face.

Have the children draw or paint smiling ☺ and unhappy ☹ faces on pieces of clean trash. You may decide to paint bottles or cans with the ☺ and ☹ faces for the children to use (use enamel paint).

Ask the children to put their smiling face trash in the correct place (wastebasket or trash can). Tell them all trash wants to be at home in the trash can. Ask the students to make their unhappy face trash into litter. Let them decide where to put the trash in the room to create litter.

Help the children complete the worksheet for CAC-9/22.

Go on to CAC-10/22

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-10/22  
IDEAS 3, 4  
OBJECTIVES 1, 4, 5**

Ask the children how they like the room with litter in it. Ask, "How did you like living with litter?" Keep the litter in the room for a few days. Afterwards, ask the children whether they liked living with litter.

As a follow-up for this exercise, you could help the class create a display on a table in your room or in the hallway using the trash can and the "happy" ☺ and "unhappy" ☹ waste.

**OPERATION WASTE WATCH**  
**LEVEL K**

**CAC-11/22**  
**IDEAS 1, 2, 3, 4**  
**OBJECTIVES 1, 2, 3, 4, 5**

**CORE**

## Going for a Walk

Take the class on a short walk around the school yard. Ask the children to name objects they see on the ground, sidewalk, or street and decide if they are natural or man-made. Keep a list of the objects and make simple drawings of each to place on the board later.

Go on to CAC-12/22



**OPERATION WASTE WATCH  
LEVEL K**

**CAC-12/22**

**CORE**

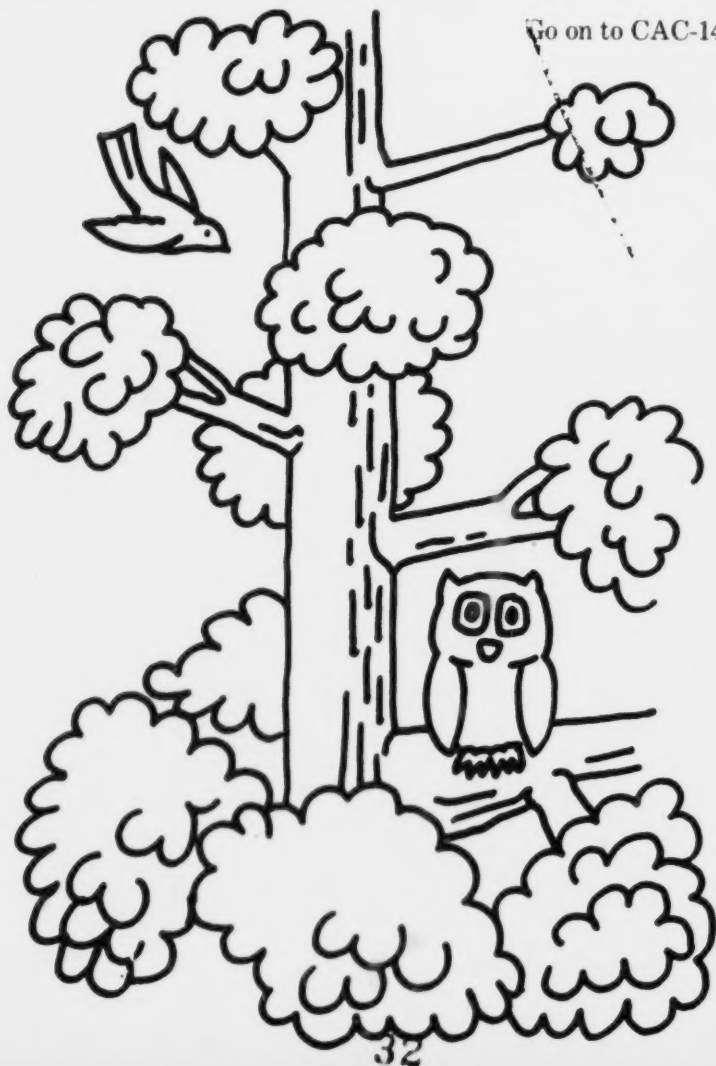
List the name and put a small drawing of each object from CAC-11/22 on the board. Ask the children to classify the objects verbally as either natural or man-made. Circle the name and picture of each natural object.

Go on to CAC-13/22

**CORE**

Have the children look at the drawings and names of the natural objects listed on the board. Ask them to think of a way people or nature can use each of the natural objects. For example, tree bark and leaves can be used as garden mulch; pebbles can be used as gravel; pine cones are eaten by birds and squirrels and also make nice Christmas decorations.

Go on to CAC-14/22



CORE

Ask the children which man-made and natural objects **belong on the ground** and which do not. There were probably several **man-made** or **man-used objects** spotted which did not belong there, such as glass bottles, paper, cans, plastic, etc. Tell the students that objects which don't belong on the ground are often the same objects their parents tell them to throw in the trash can at home. Things that people are finished using are called **trash** or **waste** and belong in a trash can (for example, cans and bottles, wastepaper, and packaging materials).

Ask the children how the trash got on the ground.

Tell the children that we call trash put in the wrong place "litter." Write the words "trash" and "litter" on the board. Ask the children to repeat these words.

Ask the class where litter belongs. (It belongs in a trash can, wastebasket, or litter bag.)

Ask the children if littering is wrong. Ask them why they think people sometimes litter their trash.

**OPERATION WASTE WATCH**  
**LEVEL K**

CAC-15/22  
IDEAS 1, 2, 3, 4  
OBJECTIVES 1, 2, 3, 4, 5

**CORE**

## **Treats**

Pass out fruit or vegetable treats wrapped in paper or clear plastic wrap. As the children unwrap and eat the treats, discuss what uses the paper or plastic has (it keeps the food fresh and clean; it keeps our hands from getting sticky, etc.). After the treats are eaten, ask if the wrapper is still useful. Tell the class that the wrapper has now become "trash" (or "waste"). Drop the wrapper on the floor. Review with the class the fact that waste dropped in the wrong place is **litter**. Ask a child to pick up the litter and put it in the correct place. Ask if the wrapper is a **man-made** or **natural object**.

**OPERATION WASTE WATCH**

**LEVEL K**

**CORE**

**CAC-16/22**

**IDEAS 1, 2, 3, 4**

**OBJECTIVES 1, 2, 3, 4, 5**

## **Finding Waste**

Have the children look around the room for littered waste objects. Ask them to identify objects that are no longer of any use, such as used crumpled papers, small pieces of chalk too tiny to use on the blackboard, used sandwich wrappers, etc. Discuss the **use** each waste object once had. Discuss the fact that the trash and litter are often **man-made objects**.

Ask the children to put any **litter** in the wastebasket.

## **Why Is Littering Wrong?**

Ask the children to think of places near their school that are cluttered with trash. Remind students that trash put in the wrong place is called **litter**.

Ask the students to tell you how all the litter got there. (Waste and litter are created by people.) Ask the children to tell you why littering is wrong.

- Some possible answers:**
1. Litter is ugly.
  2. Litter can hurt people and animals.
  3. Litter takes time and money to clean up (more than \$25 million in Virginia each year).
  4. Litter can cause fires.
  5. Litter feeds harmful rodents and insects.

**OPERATION WASTE WATCH**  
**LEVEL K**

**CAC-18/22**  
**IDEAS 1, 2, 3, 4**  
**OBJECTIVES 1, 2, 3, 4, 5**

## **Litter Bags**

Help the children make litter bags by decorating sturdy grocery bags with pictures of a clean environment.

Go on to CAC-19/22

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-19/22**

Take the class on another short walk around the school with their litter bags, and ask them to point out any litter they see.

Allow the children to pick up the natural and man-made waste that is littered and put it in their bags. (Avoid glass and other dangerous objects.) Be sure the children understand that waste should always be put into proper containers and not littered because it can hurt people and animals, and it makes a place look very ugly.

Go on to CAC-20/22

**OPERATION WASTE WATCH  
LEVEL K**

**CAC-20/22**

Back in the classroom, put a list on the board of the names of the littered objects picked up by the children. Have the students examine each piece of litter.

Ask the class to classify each object—is it natural or man-made?

Ask them where the litter came from.

Ask the children where **man-made trash** should be placed. Ask them where **natural waste** should be placed (trash receptacle, compost pile or into an appropriate setting, such as a garden or field).

Ask the children to put all the **useless** litter in a trash receptacle. If there are natural items or man-made items which can be reused or recycled, help the children reuse or recycle them. (Examples: pebbles, leaves, plastic jugs, aluminum cans, newspapers.)

## Containers

Place a trash can or wastebasket, a litter or trash bag, a glass jar, a beverage can, a basket, a plastic milk jug, and a bowl on a table at the front of the room. Ask the children how all these objects are alike. Elicit the response that they are all used to hold something else. Ask the children to tell what each object is meant to hold. Tell them that each object is a **container**. Ask them to repeat the word "container."

Crumple a used piece of paper. Ask the class if the paper is waste (yes). Now throw the paper on the floor. Ask if it is litter now (yes). Ask a child to put the paper in the correct container at the front of the room (trash can, wastebasket or litter bag).

## The Beauty of Natural Objects

During and after the unit, help your students discover the beauty of natural things. Set up a display of the natural objects used in the unit activities and encourage the children to bring in other items.

Show the children how to use hand lenses to examine the objects. Discuss their textures, colors, and shapes. Discuss the origin of each object. If you have an acorn, display a picture of a majestic oak tree or show the class some oak furniture. If you have a cardinal's feather, show the pupils a picture of the bird and play a tape of the calls of Virginia's State bird, etc.

There are several excellent books which can help you plan exciting nature discovery sessions for your children. One especially suited for the very young is Nature Activities for Early Childhood by Janet Nickelsburg (see listed Resource Materials in the Teacher Guide).

There are many unique gifts the children can make by recycling natural objects. Of great help in planning nature crafts is Snips, Snails and Walnut Whales—Nature Crafts for Children by Phyllis Fiarotta, also listed in the Teacher Guide and available in bookstores.

Many other useful publications are available from the National Audubon Society. Write to this address for a catalog:

The Book Nest, National Audubon Society  
376 Greenwood Beach Road  
Tiburon, CA 94920

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